## O12.4 IMPACT AND COST-EFFECTIVENESS OF HIV PREVENTION INTERVENTIONS AMONG TRANSGENDER WOMEN SEX-WORKERS IN LIMA, PERU USING MATHEMATICAL MODELLING INFORMED BY STAKEHOLDER ANALYSIS AND HEALTH SYSTEM CAPACITY EVALUATION

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**Background** HIV incidence remains high among transgender women (TW) in Lima, of whom the majority report sex-work. A stakeholder analysis and a health-system capacity assessment informed a mathematical modelling study to devise a tailored combination prevention programme. We modelled impact and cost-effectiveness of realistic combinations of interventions among TW sex-workers (TW-SW) in Lima.

**Methods** In an HIV policy dialogue, a stakeholder analysis provided data on acceptability, feasibility, appropriate coverage targets and scale-up times of both novel and (improved) existing interventions. The health system study assessed capacity, costs and needs. Using a published model we simulated HIV transmission among TW-SW, their clients and stable partners, with implementation of combinations of the following interventions: 15% and 10% relative increase in condom use with clients and stable partners respectively, 15% pre-exposure prophylaxis (PrEP) coverage, treatment following new WHO guidelines and "test and offer", both including testing promotion and leading to 65 and 75% coverage respectively. A social/structural component was part of all scenarios. The interventions' individual and combined impact and cost-effectiveness were assessed.

**Results** Combining increased condom use with clients and treatment under new WHO guidelines resulted in around 50% of new infections averted over 10 years; this was highly cost-effective ($90/DALY averted), under the World Bank threshold though feasibility of condom use increases remains problematic. Treatment in isolation was over the highly cost-effective threshold. A15% coverage of PrEP might be feasible and adds to impact, but is not cost-effective at $1440/year.

**Conclusions** Implementing WHO treatment guidelines, combined with increased condom use among TW-SW would be highly effective and cost-effective. Inclusion of PrEP adds to impact but requires drastic cost reductions to become cost-effective. Success of all interventions is contingent on effective adherence support. Involving stakeholders in the elaboration of mathematical modelling studies is feasible, and should result in more relevant cost-effectiveness analyses to support programmatic decision-making.

**Declaration of conflicts of interest** Dr. Guanira was the principal investigator for the Peruvian IPrEX sites. All authors declare having no conflicts of interest.

## O12.5 BEHAVIOURAL INTERVENTIONS IMPROVE CONDOM USE AND HIV TESTING UPTAKE AMONG FEMALE SEX WORKERS IN CHINA: A SYSTEMATIC REVIEW AND META-ANALYSIS

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**Introduction** Condom less commercial sex work is a common mode of HIV transmission in China. This study systematically reviews the impacts of behavioural interventions on condom use and HIV testing uptake among female sex workers (FSW) in China.

**Methods** Chinese and English language peer-reviewed articles published between January 2000 and December 2013 were searched in five electronic databases. Odds ratios (OR) were calculated by comparing the levels of improvements in condom use and HIV testing uptake by various intervention strategies. Study quality was assessed for included studies. This review followed the PRISMA guidelines and was registered in PROSPERO (CRD42014013466).

**Results** One hundred and twenty-eight studies met inclusion criteria. Meta-analyses indicated that FSW in the post-intervention period were 2.3–5.0 times more likely to use condoms with male clients in their last sexual act and 2.3–3.4 times more likely to consistently use condoms in the last month than in the pre-intervention period. In particular, multiple intervention sessions were more effective in improving condom use among FSW with male clients (OR = 5.6, [4.0–7.8]) than a single intervention session (OR = 3.3, [2.8–3.8]). Behavioural interventions also improved past-12-month HIV testing uptake 4.6 fold (95% CI, 2.9–7.4). Comprehensive intervention programs, which include health education plus additional sexual health care services, testing for HIV infection and counselling services, were more effective (OR = 8.1, [4.0–16.7]) in improving HIV testing uptake compared with health education only programs (OR = 2.7, [1.6–4.5]). Longer intervention duration (>12 months) did not increase effectiveness in improving condom use or HIV testing rate among Chinese FSWs.

**Conclusion** Behavioural interventions are effective in improving condom use and HIV testing uptake among Chinese FSW. This review highlights both the potentials and limitations of condom promotion interventions targeting female sex workers.

**Disclosure of interest statement** None.